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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/021,879 | 12/13/2001 | Heinz Forster | 12102 | 2743 |
| 28484 | 7590 | 12/01/2003 | EXAMINER | |
| BASF CORPORATION LEGAL DEPARTMENT 1609 BIDDLE AVENUE WYANDOTTE, MI 48192 | | | BISSETT, MELANIE D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1711 | |

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,879

Applicant(s)

FORSTER ET AL.

Examiner

Melanie D. Bissett

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

1. The rejections based on 35 USC 103 have been maintained.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over BASF in view of Schneider et al.

4. From a prior Office action:

3. BASF discloses a composite comprising two outer layers of metal having a thickness of 2-20 mm and a core layer of polyisocyanate-polyaddition product having a thickness of 10-100 mm, where the polyaddition product is the reaction product of isocyanates and an isocyanate-reactive component in the presence of 0.1-50 vol% gas and optional catalysts and additives (abstract). The composites are made by reacting the components between the two metal layers and are used to form structural components for bats, building constructions, etc. (abstract). However, the reference does not seem to indicate the use of inorganic acids in the polyurethane reaction mixture.

4. Schneider discloses polyurethane foams that perform well in closed molds made with mixtures of polyisocyanates, isocyanate-reactive compounds, and materials that liberate carbon dioxide as a blowing agent (abstract). The polyurethane foam mixtures have longer flow times to aid in processing (col. 2 lines 27-56). Tertiary amine catalysts are preferred as catalysts to speed carbon dioxide evolution (col. 4 lines 20-36), diphenylmethane diisocyanates containing carbodiimide groups are preferred as the isocyanate component (functionality greater than 2) (col. 5 lines 49-58), polymer polyols are preferred as the isocyanate-reactive components (col. 5 line 59-col. 6 line 18), and inorganic reaction retarders are noted for use in the invention (col. 9 lines 19-28). Metal molds are used to form the polyurethane foams (col. 9 lines 38-52). Example 1 shows a mixture comprising polymer polyols, foam stabilizers, a catalyst, a phosphoric acid reaction retarder, a blowing agent, and a polyisocyanate. The foaming reaction mixture is introduced into a mold and foamed to form an article having a density of 390 kg/m³. Schneider also notes the use of the foams in car bodies and as safety padding in motor vehicles (col. 10 lines 3-8). From Schneider's teaching of foaming mixtures that are easily injected into molds, it is the examiner's position that it would have been prima facie obvious to use Schneider's polyurethane mixtures in BASF's composites to ease the processing in the formation of metal-foam-metal composites due to the improved flow times of the polyurethane mixtures.

Response to Arguments

5. Regarding the applicant's arguments that the present invention does not utilize a carbon dioxide liberating compound or a basic compound, it is noted that such compounds are not excluded from the present claims. Also, note that the liberation of carbon dioxide fits the applicant's gases or blowing agents used to form the composite.

6. In response to the applicant's arguments that the hard outer skin and hard foam produced by Schneider would not suggest the applicant's claimed layer (ii), note first that the composite claims do not limit the layer (ii) to be adhered to metal layers (i) and (iii). Secondly, note that Schneider does not limit the invention to those hard foams having a hard outer skin. Rather, the foams of Schneider's invention encompass any foam to be molded by the discussed techniques. Schneider teaches that the invention applies to any polyurethane foam to be molded in a closed mold (col. 2 lines 48-56), also teaching how to alter the foam mold to produce or prevent skin formation (col. 38-52). Note also that the invention encompasses both semi-hard and hard foams (abstract). The applicant has not provided evidence to show that such foams would not produce the claimed invention.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539 or (571) 272-1068 after December 2003. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb


RABON SERGENT
PRIMARY EXAMINER